

that the winding step (A)(3)(a) and the moving step (A)(3)(b) are performed until all of the segments of the plurality of segments have been wound, and

(4) repeating the arranging step (A)(1), the rotating step (A)(2), and the winding step (A)(3) for each of the remaining sets of segments; and

(B) combining the N sets of segments in a common circular arrangement to form the wound member; and

wherein each of the N sets of segments is wound separately from remaining ones of the sets of segments and then combined in the common circular arrangement with the remaining ones of the sets of segments to form the wound member.

REMARKS

Entry of the above amendments is respectfully requested. Claims 1 and 7 have been canceled. Claim 2 has been rewritten in independent form to incorporate the limitations of claim 1. Claims 2, 4-6, 8, and 21-23 are pending in the application. Favorable reconsideration and allowance of the application is respectfully requested in light of the foregoing amendments and the remarks which follow.

1. Claim Objection - 37 C.F.R. § 1.75

The Examiner objected to newly submitted claim 22 under 37 C.F.R. § 1.75 as being a substantial duplicate of claim 7. Applicant has canceled claim 7.

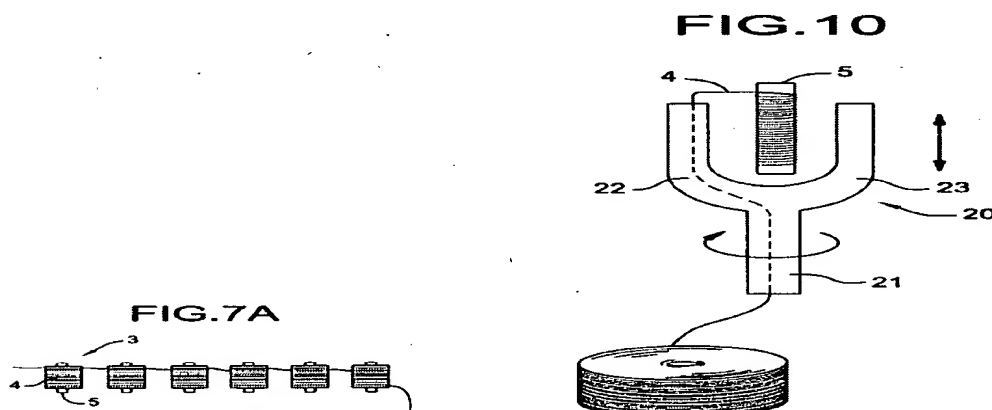
Accordingly, withdrawal of the objection to newly submitted claim 22 is respectfully requested.

2. Claim Rejections - 35 U.S.C. § 102(e)

The Examiner rejected claims 2, 4-6, and 8 under 35 U.S.C. § 102(e) as being anticipated by Takehara ("Takehara"; U.S. Pat. No. 6,163,952). Claim 2 recites

"(1) arranging a plurality of segments in a side-by-side orientation *along an axis of rotation*" and "(2) rotating the plurality of segments and a wire dispenser relative to each other *about the axis of rotation*." In other words, in claim 2, the segments are arranged along the same axis ("the axis of rotation") about which relative rotation between the segments and the wire dispenser occurs. Takehara does not teach or suggest claim 2 because Takehara does not teach or suggest this feature.

The Examiner takes the position that the arranging step is shown inter alia in Fig. 7A of Takehara and the rotating step is shown in Fig. 10 of Takehara (see Office Action, paragraph 5). For convenience, these Figures are reproduced below.



In Takehara, it is seen in Fig. 7A that the coils 4 are arranged along an axis which is a *horizontal* axis as depicted in Fig. 7A. In contrast, it is seen that the member 22 rotates relative to the coils 4 along an axis that is a vertical axis as depicted in Fig. 10. Therefore, the axis of rotation is *orthogonal* to, and not the same as, the axis along which the coils 4 are arranged. Therefore, Takehara does not teach or suggest arranging a plurality of segments in a side-by-side orientation *along an axis of rotation* and rotating the plurality of segments in a wire dispenser relative to each other *about the axis of rotation*.

Claim 4 recites "(A) arranging a plurality of segments in a side-by-side orientation *along an axis of rotation*," and "(B) rotating the plurality of segments and a wire dispenser relative to each other *about the axis of rotation*." Accordingly, claim 4 is believed to be allowable for generally the same reasons that claim 2 is allowable.

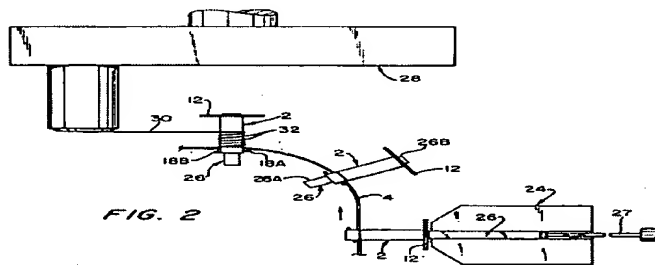
Claims 5, 6 and 8 depend from claim 4 and are therefore believed to be allowable for the same reasons that claim 4 is allowable.

Accordingly, withdrawal of the rejections under 35 U.S.C. § 102(e) is respectfully requested.

3. Claim Rejections - 35 U.S.C. § 102(b)

The Examiner rejected claims 2, 4-6, and 8 under 35 U.S.C. § 102(b) as being anticipated by Searle ("Searle"; U.S. Pat. No. 4,350,914).

The arrangement of Searle appears to be generally similar to that of Takehara, and therefore Searle does not teach or suggest the present invention as defined by claim 2 for the same reasons that Takehara does not teach or suggest the present invention as defined by claim 2. For convenience, Fig. 2 (cited by the Examiner in connection with the rotating step) is reproduced below.



As shown in Fig. 2, relative motion between a winding machine 28 and a bobbin 2 occurs along a vertical axis. However, the bobbins 2 are not arranged in a side-by-side orientation along this axis. Therefore, Searle does not teach or suggest "(1) arranging a plurality of segments in a side-by-side orientation *along an axis of rotation*" and "(2) rotating the plurality of segments and a wire dispenser relative to each other *about the axis of rotation*."

Accordingly, withdrawal of the rejections under 35 U.S.C. § 102(b) is respectfully requested.

4. Claim Rejections - 35 U.S.C. § 103(a)

The Examiner rejected claims 21-23 under 35 U.S.C. § 103(a) as being unpatentable over either Searle or Takehara in view of Japanese Patent Publication, JP 60-182119 ("JP'119").

Claim 21 recites "wherein, during the rotating step (2), relative rotation between the plurality of segments and the wire dispenser is established by virtue of the plurality of segments rotating and the wire dispenser remaining substantially stationary." The Examiner acknowledges that this feature is not taught or suggested by Searle and Takehara, and instead relies on JP'119 for this feature. The Examiner's stated motivation for making this combination is to provide a wound member "without decreasing magnetic characteristics" (citing JP'119, PURPOSE). Applicant is not sure what is meant by "decreasing magnetic characteristics" or why this would be considered desirable in the context of an electric motor (JP'119 does not appear to relate to an electric motor). In any event, it appears that this benefit is achieved due to the multiple stage bobbin feature and *not* due to the fact that the bobbin 2 appears to rotate while the wire dispenser 3 appears to remain stationary during fabrication. It therefore appears that the benefits of JP'119 can be achieved regardless whether it is the bobbin 2 or the wire dispenser 3 that rotates. Therefore, Applicant respectfully submits that JP'119 does not provide the requisite motivation for the change proposed by the Examiner because the benefit cited by the Examiner is achieved by a feature that is unrelated to the manner in which the bobbin 2 is wound (i.e., stationary vs. rotating).

Moreover, given the relatively complex geometry of the plurality of bobbins 2 in Searle and the plurality of coils 4 in Takehara, it is not clear how the systems described by Searle and Takehara could be modified such that the bobbins/coils rotate and the wire dispenser remains stationary. For example, in Fig. 7A of Takehara, the coils 4 would have to rotate about a vertical axis, but the vertical axes are different for each of the coils 4. Therefore, it is not clear what type of machine could be used to rotate the coils 4 while the coils 4 are wound. The same is true of Searle. Therefore, for this additional reason, Applicant respectfully submits that a person of ordinary skill in the art would have not been motivated to modify Searle and Takehara in the manner contemplated by the Examiner.

Claim 22 cites features that are similar to those recited by claim 21, except that claim 22 depends from claim 4 instead of claim 2. Nevertheless, claim 22 is believed to be allowable for generally the same reasons that claim 21 is allowable.

Claim 23 recites in step (A)(1) "arranging a plurality of segments in a side-by-side orientation *along an axis of rotation*" and in step (A)(2) "rotating the plurality of segments *about the axis of rotation*." Therefore, claim 23 is believed to be allowable for generally the same reasons as claims 2 and 4 as discussed above. Additionally, claim 23 recites "winding a segment while the wire dispenser is positioned adjacent the segment *and the segment is rotating*." Therefore, claim 23 is also believed to be allowable for generally the same reasons that claims 21 and 22 are allowable.

Accordingly, withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

5. Conclusion

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of the application is respectfully requested. Should the Examiner have any remaining questions, the Examiner is invited to contact the undersigned at the telephone number appearing below.

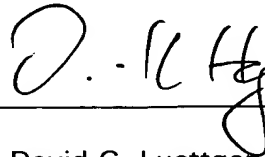
The Assistant Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.116-1.17, or credit any overpayment, to Deposit Account No. 06-1447.

Respectfully submitted,

Date

8/13/01

By



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

• ***Marked up rewritten claim:***

1 2. (Twice Amended) [A method according to claim 1, wherein the
2 winding step includes] A method of constructing a segmented wound member
3 of an N phase electromechanical device, comprising:
4 (A) winding N sets of segments, each segment of the N sets of
5 segments defining a bobbin, the N sets of segments being
6 wound with a single continuous length of wire for each set,
7 including
8 (1) arranging a plurality of segments in a side-by-side
9 orientation along an axis of rotation/ the plurality of
10 segments forming one of the N sets of segments;
11 (2) rotating the plurality of segments and a wire
12 dispenser relative to each other about the axis of
13 rotation;
14 (3) winding the plurality of segments during the relative
15 rotation of the plurality of segments and the wire
16 dispenser; and
17 (4) repeating the arranging step (1), the rotating step (2)
18 and the winding step (3) for each of the remaining
19 sets of segments; and
20 (B) combining the N sets of segments in a common circular
21 arrangement to form the wound member; and
22 wherein each of the N sets of segments is wound separately from
23 remaining ones of the sets of segments and then combined in the common
24 circular arrangement with the remaining ones of the sets of segments to form
25 the wound member.

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